LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Currently Amended)** Fuel injection system of the common rail type comprising:

a plurality of injectors [[(2)]], a common channel [[(3)]] that supplies the fuel under pressure to the injectors [[(2)]], a high-pressure pump [[(4)]], which supplies fuel to the common channel [[(3)]] and is provided with a device [[(6)]] for regulating the flow rate and a control unit [[(7)]] capable of keeping the pressure of the fuel within the common channel [[(3)]], moment by moment, equal to a desired value that generally varies over time;

the control unit [[(7)]] being coupled to the regulation device [[(6)]] in order to control the flow rate of the high-pressure pump [[(4)]] so as to supply the common channel [[(3)]], moment by moment, with the amount of fuel required in order to have the desired value for pressure inside said common channel [[(3)]];

the control unit [[(7)]] comprising a sensor [[(11)]] that is capable of recording the value for the pressure of the fuel inside the common channel [[(3)]], and is capable of regulating the flow rate of the high-pressure pump [[(4)]] by means of a feedback control using as a feedback variable the value for the pressure of the fuel inside the common channel [[(3)]];

the high-pressure pump [[(4)]] comprising at least one cylinder [[(12)]] provided with a piston [[(13)]] having an alternating motion inside the cylinder [[(12)]], an intake channel [[(14)]], a discharge channel [[(15)]] connected to the common channel [[(3)]], an intake valve [[(16)]] coupled to the intake channel [[(14)]] and capable of allowing a flow of fuel to pass into the cylinder [[(12)]], and a single-direction delivery valve [[(17)]] coupled to the discharge channel [[(15)]] and capable of allowing a flow of fuel only out of the cylinder [[(12)]];

the regulation device [[(6)]] being coupled to the intake valve [[(16)]] in order to keep the intake valve [[(16)]] open when the piston [[(13)]] is in a compression phase and therefore to allow fuel to flow back out of the cylinder [[(12)]] through the intake channel [[(14)]]; the intake valve [[(16)]] comprising a valve body [[(18)]] moveable along the intake channel [[(14)]] and a

valve seat [[(19)]] that is capable of being acted upon in a fluid-tight manner by the valve body [[(18)]] and is arranged at the end of the intake channel [[(14)]] opposite the end communicating with the cylinder [[(12)]];

the regulation device [[(6)]] comprising a control member [[(24)]] that is coupled to the valve body [[(18)]] and is moveable between a passive position, in which it allows the valve body [[(18)]] to act in a fluid-tight manner upon the valve seat [[(19)]], and an active position, in which it does not allow the valve body [[(18)]] to act in a fluid-tight manner upon the valve seat [[(19)]];

the regulation device [[(6)]] comprising an electromagnetic actuator [[(25)]] that is coupled the control member [[(24)]] in order to move said control member [[(24)]] between the passive position and the active position;

the electromagnetic actuator comprising a spring capable of keeping the control member in the active position, and an electromagnet capable of moving the control member into the passive position;

wherein the force exerted by the spring of the actuator is significantly less than the force exerted by the pressure on the valve body of the intake valve; and

~~the system (1) being characterised by the fact that~~ wherein the control unit comprises control means for driving the electromagnetic actuator [[(25)]] ~~is driven~~ by means of a pulse of current of short and constant duration.

2. (Currently Amended) System according to claim 1, in which the intake valve [[(16)]] is open and the delivery valve [[(17)]] is closed when the cylinder [[(12)]] is in an intake phase in order to supply the cylinder [[(12)]] with a given, constant amount of fuel, while the intake valve [[(16)]] is closed and the delivery valve [[(17)]] is open when the cylinder [[(12)]] is in a delivery phase in order to supply fuel under pressure to the common channel [[(3)]]; the control unit [[(7)]] being capable of keeping the intake valve [[(16)]] open during an initial part of the delivery phase of the cylinder [[(12)]] in order to discharge through the intake conduit [[(14)]] the amount of fuel present in the cylinder [[(12)]] that exceeds the amount of fuel required in order to have the desired value for pressure inside said common channel [[(3)]].

3. **(Currently Amended)** System according to claim 1, in which the intake valve [[(16)]] comprises a respective spring [[(20)]] capable of pushing the valve body [[(18)]] towards a fluid-tight engaged position of the valve seat [[(19)]].

4. **(Currently Amended)** System according to claim 1, in which the control member [[(24)]] is moveable between the active position and the passive position along a linear distance parallel to the direction of flow of the fuel through the intake channel [[(14)]].

5. **(Canceled)**

6. **(Currently Amended)** System according to claim 1, in which the delivery valve [[(17)]] comprises a valve body [[(21)]] moveable along the discharge channel [[(15)]] and a valve seat [[(22)]] that is capable of being acted upon in a fluid-tight manner by the valve body [[(21)]] and is arranged at the end of the discharge channel [[(15)]] communicating with the cylinder [[(12)]].

7. **(Currently Amended)** System according to claim 6, in which the delivery valve [[(17)]] comprises a respective spring [[(23)]] capable of pushing the valve body [[(21)]] towards a fluid-tight engaged position of the valve seat [[(22)]].

8. **(Currently Amended)** System according to claim 1, comprising a low-pressure pump [[(8)]] capable of supplying the fuel from a tank [[(9)]] to the high-pressure pump [[(4)]] by means of a tube [[(10)]], along which an overpressure valve [[(29)]] connected to the tank [[(9)]] is inserted.